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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/922,776

08/07/2001

Tetsuji Togawa

2001-1103

2271

7590

05/06/2004

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EXAMINER

ROSE, ROBERT A

ART UNIT

PAPER NUMBER

3723

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/922,776

**Applicant(s)**

TOGAWA ET AL.

**Examiner**

Robert Rose

**Art Unit**

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46, 50 and 51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 and 18 is/are allowed.
- 6) ☒ Claim(s) 12-14, 16, 17, 19-42, 50 and 51 is/are rejected.
- 7) ☒ Claim(s) 15 and 43-46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Receipt is acknowledged of Applicant's Prior Art Statement, filed February 10, 2004.
2. Claims 47-49 have been canceled.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 22-28, 31, and 50-51 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Okumura et al. Okumura et al disclose an apparatus for polishing a wafer comprising all of the subject matter set forth in applicant's claims above. A wafer is picked up from a loading station(11) to a wafer loading position(13-1)(14-1) by a transfer system in the form of either a single dual-arm robot(10), or pair of robots(10A)(10B) as shown in fig. 11. The wafer is then picked up by a top ring of a polishing arm(13-2)(14-2) and applied to a polishing unit(13-4)(14-4). After polishing, the wafer is delivered to a cleaning device having a primary cleaning station(16-7) and secondary cleaning station(15-9), where the wafer is rinsed. The wafer is then delivered by the transfer system to a storage cassette. Alternatively, the rinsed wafer may be delivered to a second polishing unit. Note plural cleaning units shown in figures 2A and 5 with an associated turnover device for inverting the wafer. The cleaning unit(15) in figure 11 is deemed to meet the broad limitation of being disposed between the polishing

unit(14) and the load/unload unit(11)(12), with the transfer device located in the space between the polishing unit and load/unload unit..

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12-14, 16-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al. Okamura et al teach(at col. 6, lines 59-65, and at column 9, lines 41-45) that it is desirable to provide additional washing units in the case where the cycle time of the washing process is longer than the polishing time. To provide additional cleaning units along the transfer path in the apparatus of Okamura et al to clean more workpieces, in such instances where the polishing units take less time to polish wafers than the cleaning units take to rinse them, would have been at most an obvious duplication of parts to those of ordinary skill in the art, especially in view of the teaching of Okamura et al.

7. Claims 20, 29, 32-38, and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al in view of Karlsrud et al. Okamura is silent with respect to the structure of the load/unload unit, and with respect to the loading positions(13-1)(14-1) from which the wafers are picked up by the top ring of the polishing arm. However, it is known in the wafer polishing art as evidenced by Karlsrud et al to employ plural wafer cassettes (106)(107)(108)(109) in the load/unload unit, and to employ a vertically movable pusher

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assembly(figs. 2-3, 6a, 6b, 7a, and 7b) to facilitate transfer of the wafer to the top ring(139) from the loading position, to ensure that the wafer is properly oriented when it is picked up by the top ring. To embody the loading positions of Okamura et al as vertically movable pushers to correctly orient the wafer on the top ring would have been obvious in view of Karlsrud et al. To further provide plural cassettes in the loading and unloading unit in Okamura et al to store wafers in a stacked relationship while still making them fully accessible by a robot arm would have been obvious in view of Karlsrud et al.

8. Claims 21, 30, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al in view of Dexter et al. Dexter et al discloses a cleaning and drying unit for post polishing cleaning of semiconductor wafers comprising a pair of opposed scrubbing rollers for removing particles from both surfaces of the wafer simultaneously. To utilize opposed scrubbing rollers in the cleaning units of Okamura et al to simultaneously remove contaminants from both sides of the wafers would have been obvious in view of Dexter et al.

9. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al in view of Karlsrud et al and further in view of Dexter et al. Karlsrud et al is applied as above for the teaching of providing a vertical pusher at the loading positions(13-1)(14-1) for transferring the wafers to the top rings. Dexter et al discloses a cleaning and drying unit for post polishing cleaning of semiconductor wafers comprising a pair of opposed scrubbing rollers for removing particles from both surfaces of the wafer simultaneously. To utilize opposed scrubbing rollers in the cleaning units of Okamura et al to simultaneously remove contaminants from both sides of the wafers would have been obvious in view of Dexter et al.

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10. Claims 15, and 43-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 1-11, and 18 are allowed.

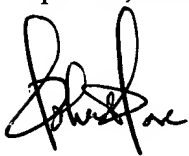
12. Applicant's arguments with respect to claims 1-46, and 50-51 have been considered but are moot in view of the new ground(s) of rejection.

13. In view of the new grounds of rejection not necessitated by Applicant's response, this action is not made final.

14. Any inquiry concerning this communication should be directed to Robert Rose at telephone number (703) 308-1360.

rr

April 28, 2004.

A handwritten signature in black ink, appearing to read "Robert Rose", is written below the date.